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THE ROLE OF SCIENCE AND TECHNOLOGY IN THE CONTEXT OF INTERNATIONAL SECURITY, DISARMAMENT AND OTHER RELATED FIELDS

The application of science and technology for verification purposes

Working paper submitted by Canada

Introduction

In its resolution 43/81 B of 7 December 1988, the General Assembly endorsed 16 verification principles recommended by the Disarmament Commission. These principles included the recognition that "adequate and effective verification is an essential element of all arms limitation and disarmament agreements". Another of these general principles recognized that "adequate and effective verification requires employment of different techniques, such as national technical means, international technical means and international procedures, including on-site inspections". 1/

During the course of discussions in the Disarmament Commission Working Group on Verification in All Its Aspects, during 1987 and 1988, it was evident that advanced technical and scientific methods play an indispensable role in the verification process and that they will continue to do so. The report of the Group of Qualified Governmental Experts to Undertake a Study on the Role of the United Nations in the Field of Verification 2/ echoed this view. That study inter alia surveyed a variety of verification methods including those involving advanced technology, noted that new ideas and monitoring techniques for verification are continually being generated and refined, noted as well that no single verification tool is likely to be sufficient for any accord (a

synergistic and overlapping application of numerous approaches and devices is likely to be needed), and highlighted in particular the role that the United Nations can play in helping to facilitate the dissemination of information on research relating to cooperative arrangements for verification.

As this previous work within the United Nations has indicated, it is fair to say that science and technology plays a central role in providing solutions to the verification of arms control agreements. The 1960s and 1970s, for example, saw tremendous strides in the development of overhead remote sensing technologies for military intelligence and other purposes. These advances involved the use of remote sensors or, as they have come to be known, "national technical means" (NTM), to monitor events from great distances. The ability of the superpowers to adapt certain of these remote sensing techniques to arms control verification greatly facilitated the negotiation of significant bilateral strategic arms limitation agreements during the 1970s and 1980s. Gradually, the lessons learned in the bilateral context have been applied to the multilateral process, most recently in the use of overhead imagery and of on-site inspection techniques. The experience of the United Nations inspections in Iraq under Security Council resolution 687 (1991) is an excellent example of a multilayered approach to the verification of compliance.

Canada's Verification Research Program

Science and technology by their nature involve research activities. This research process can be focused directly on relevant verification questions. Canada's Verification Research Program has sought to do just this, recognizing the role that advanced science and technology has to play in multilateral verification activities. At the foundation of this Program, from its inception in 1984, is the assumption that research into verification provisions and techniques can be profitably conducted independent of specific negotiation contexts. Such efforts can be productive in generating new ideas and solutions to specific problems and overcoming obstacles in specific negotiations.

The verification requirements in certain agreements may be so complex that, without substantial preconsideration of verification questions, negotiations may founder and agreements may become impossible to conclude. Therefore, it is crucial that there be attempts to address verification concerns beginning in the earliest stages of agreement consideration. Moreover, technologies and procedures for verification purposes must be continually discussed, researched and updated if verification capabilities are to keep pace with the demand placed on them through relentless technological development and increasingly complex arms limitation agreements.

Not only can the study and consideration of verification help allay concerns about possible abuses of the verification process but it can also facilitate arms control and disarmament. There are many initiatives that can be undertaken to prepare and develop a range of instruments - legal, institutional and technological - that could contribute to the potential for the verification of specific agreements. General research into and

consideration of verification principles, provisions and techniques also offer the promise that effective verification systems can be made less intrusive and, therefore, more acceptable to parties concerned about the potential intelligence-gathering capabilities of verification systems.

Applying science and technology to verification: some research examples

Research undertaken under the Canadian Program has been applied to the negotiating and operational phases of the verification process to good effect. As the requirements have been determined, Canada, in assocation with like-minded nations, has shared research results in a manner meant to facilitate the negotiation process.

The application and scope of Canada's activities relating to verification provides an example of a practical programme by which science and technology has been applied to arms control verification issues. For purposes of illustration, a number of issue areas in which Canada has conducted verification research are briefly reviewed below.

A. Chemical weapons

Negotiations on chemical weapons predate this century. The present multilateral negotiations at Geneva, aimed at achieving a comprehensive convention which would prohibit the development, production and stockpiling of chemical weapons as well as their use, are expected to produce an agreement ready for signature by the end of 1992. Having chaired the Chemical Weapons Ad Hoc Working Group at the Conference on Disarmament in 1983, Canada continued to focus on the verification aspects of the Chemical Weapons Convention rolling text. Within the last 18 months, Canada has initiated research and sponsored a number of experiments aimed at quantifying the national and international responsibilities which would have to be assumed by nations upon signature. At the operational level, Canada has undertaken a number of projects at the lower end of technology, aimed at illustrating the utility of collateral analysis as a basic verification method.

B. Nuclear testing

Canadian research, undertaken primarily at the University of Toronto, has focused on the refinement of seismological detection means for the purpose of verifying compliance with a possible comprehensive test ban. Forensic seismology provides the primary means for monitoring nuclear explosions that take place underground. Improved seismographic hardware, Canadian research expertise, and the availability of a vast "proving ground" (the Canadian land mass which bears close resemblance to other regions of nuclear-test-ban verification interest), are all helping Canada remain a notable contributor to this highly specialized branch of seismology.

Canadian seismic experts who have been involved in the Geneva negotiations on this subject for several decades stress that the problem is highly complex, involving many unknowns on the technical side.

The research carried out at the University of Toronto since November 1985 has two components: (a) teleseismic verification using P wave recordings from both the old and the recently refurbished Yellowknife Seismic Array (YKA); and (b) regional (close-in) verification using high-frequency recordings from the Eastern Canada Telemetred Network; a group of stations installed to record earthquakes.

This data-intensive approach is complemented by the development of a new method of signal identification and processing. Rooted in recent advances in mathematical engineering, the "oriented energy approach" has been introduced by the University of Toronto team into seismic wavefield analysis, taking advantage of the recent availability of the three-component, broadband recordings of the refurbished YKA. Preliminary investigations have shown that the new approach facilitates effective recognition of signals which were previously buried in noise. In effect, by turning network stations (instrumentation plus station geological site effects) into nearly identical "clones", fewer recording stations are required per seismic event to establish positive source identification and reliable yield estimation.

The results of this research were shared with member nations of the Conference on Disarmament during its 1991 summer session. The results are now being applied in an operational sense in conjunction with ongoing work at the Yellowknife Seismic Array.

C. Outer space

Outer space is likely to become an increasingly important element of the arms control agenda in the near future. The question of an arms race in outer space has long been on the agenda of bilateral forums between the United States of America and the former Union of Soviet Socialist Republics and multilateral forums concerned with arms control and disarmament.

Canada is committed to the prevention of an arms race in outer space and has remained a firm proponent of maintaining space as a weapons-free environment. Canada supports respect for existing laws and agreements, bilateral and multilateral, governing the use of outer space and views the Conference on Disarmament (CD), through its Ad Hoc Committee on Outer Space (AHCOS), as the forum within which to carefully assess the existing outer space regime as well as possible new measures. We have been active in promoting broad international support for discussions relating to the AHCOS mandate and recognize that multilateral initiatives in the CD context should be complementary to and supportive of bilateral negotiations. We realize that any significant multilateral treaty aimed at preventing the stationing of weapons in outer space should have a strong and practical verification component to it. From a Canadian perspective, research into methods of verifying "non-weaponization of space" has been a focus of concern.

In 1984, Canada initiated a national research programme on the potential problems for verification arising from the dual-use characteristics of certain space systems. "PAXSAT A" was a research project aimed at the feasibility of

space-to-space remote sensing, with satellites used to identify the purpose and function of other space objects. It concluded that space-to-space verification was a feasible concept but identified a number of significant problem areas to be resolved. It recognized that feasibility research relating to other verification concepts (i.e., on-site inspection at a space-launch facility and on the production line) would be extremely useful. Canada shared the results of its PAXSAT research with members of the CD in April 1987.

The Verification Research Program has also sponsored some highly innovative investigations into technical methods to quantify the potential harm that one satellite can pose to another, with the aim of facilitating the development of confidence building and verification measures respecting outer space.

D. Conventional forces

The Conventional Forces in Europe (CFE) Treaty on 19 November 1990 called on the parties to continue negotiations with the goal of building upon that disarmament agreement. These ongoing negotiations - often called the CFE 1A negotiations - have as one agenda item: "measures to limit the personnel strength" of conventional armed forces within the Atlantic-to-the-Urals (ATTU) zone.

Although verifying limitations on military personnel, whether in the CFE or other contexts, will not be easy, it is possible and will likely involve its own unique characteristics. 3/ Unlike much of the military equipment (such as missiles and tanks), which to date have been the focus of arms control and disarmament efforts, personnel seems, at first glance, less susceptible to traditional verification methods. This is true because military personnel are much harder to count with any precision, especially from a distance. There could also be significant definitional problems because of differences in force structures between nations, particularly the greater reliance by some countries on reserve and paramilitary forces. Nevertheless, even here Canadian research suggests that advanced technology could play a role, in particular, the use of overhead imagery and improved personnel management techniques, including the use of "smart cards" for data maintenance and retrieval, could foster complementary methods for verifying personnel strength limitations.

E. Open Skies

The Open Skies proposal should be viewed both as a confidence-building measure (CBM) and as an opportunity to employ overhead imagery as a means of verification in the context of a multilateral treaty. The critical negotiations began in Ottawa, Canada, on 12 February 1990. After three days of ministerial discussion, the delegations, representing the nations of the NATO Alliance and the Warsaw Treaty Organization settled down to three weeks of intensive work on the details of the regime. The delegations next met in Budapest, Hungary, for a three-week session (23 April-10 May 1990). On

9 September 1991, a third round began in Vienna. It reached agreement on a Treaty which was signed on 24 March 1992.

As a practical means of exploring the capabilities and problems likely to be encountered in Open Skies operations and sensors, Canada and Hungary agreed to stage reciprocal observation flights. The first Canadian-Hungarian Open Skies trial overflight took place on 6 January 1990 in Hungary. A Canadian Armed Forces C-130 Hercules transport aircraft flew a large "figure eight" pattern over Hungary, covering a number of Hungarian and Soviet bases. The purpose of the overflight was to test the Air Traffic Control procedures required to stage short notice overflights along complex flight routes involving both military and civilian airspace and numerous altitude changes.

The 1990 trial flight over Hungary achieved its objectives and proved that Open Skies flights would pose no problem for Air Traffic Control in the busy airspace of Central Europe. Because the purpose of the flight was strictly to test Air Traffic Control, the aircraft did not carry sensors.

In order to further the work of the delegations in Vienna, Canada and Hungary initiated a reciprocal trial overflight over Canada. They agreed that the flight should be a more far-ranging test of the emerging regime than had been possible in January of 1990. Accordingly, they decided it would be appropriate to use some of the sensors under discussion in Vienna, and to test some of the procedures outlined in the rapidly evolving draft Treaty under discussion there. The trial flight was completed in Canada during the week of 13-17 January 1992. The results of the trial provided technical information directly relevant to the negotiations.

United Nations Special Commission/International Atomic Energy Agency activities

The verification experience accumulated by the United Nations Special Commission (UNSCOM) is truly impressive. The accumulated inspection experience is potentially precedent-setting in terms of the multilateral verification process. The UNSCOM experience is important particularly in terms of the interrelationship of methods used. UNSCOM has combined information gained from space-based sources, airborne sensors, on-site inspectors, defectors and collateral analysis. UNSCOM, through a unique set of circumstances, has developed a comprehensive verification package which could well serve as a prototype for future multilateral verification. The experience of UNSCOM reaffirms the important role that advanced technology can usefully play in verification matters.

Conclusion

Canadian experience with respect to verification questions indicates that intensive study of the verification issue can not only allay concerns but also facilitate the arms control and disarmament process. A key dimension of this research activity involves the application of science and technology to verification purposes. There are many initiatives that can be undertaken to prepare and develop a range of instruments that could contribute to the

potential for the verification of specific agreements. The work of the Conference on Disarmament Group of Scientific Experts is a good example of this point.

General research into verification techniques also offers the promise that effective verification systems can be made less intrusive and, therefore, more acceptable to parties concerned about the potential intelligence-gathering capabilities of verification systems. If appropriate verification procedures are in place, intentions can be clarified and military capabilities made more evident. In the best environment, adequate and effective verification can help build and maintain confidence between nations; in the worst environment, it can facilitate the taking of such steps as may be necessary to protect national security when non-compliance becomes evident.

Canadian experience with respect to multilateral verification research suggests several principles respecting the application of science and technology to verification purposes, which might be worth further consideration within the Disarmament Commission. These include the following:

1. Technologies and procedures for verification purposes must be continually discussed, researched and updated, if verification capabilities are to remain adequate and effective.

2. Ongoing verification research activities provide an important component of any national or international verification strategy.

3. The continuous exchange of verification research results and related information is an important form of international cooperation in the application of science and technology to verification.

4. The use of advanced verification technologies will involve the availability of appropriate resources in terms of skilled personnel, training, equipment, etc.; not only with respect to data collection but also with respect to data analysis. Such capabilities take time to develop and their development can be facilitated by international cooperation.

5. The synergistic effects among verification methods, whereby different monitoring techniques can complement and reinforce one another, are an important component of verification effectiveness.

6. The use of advanced technology can reduce the level of intrusiveness of a verification system, in the sense of reducing the presence of foreign inspectors on-site and the level of disruption to the internal affairs of States.

Notes

1/ See Official Records of the General Assembly, Fifteenth Special Session, Supplement No. 3 (A/S-15/3), p. 44.

2/ A/45/372 and Corr.1.

3/ For a more detailed discussion see: George Lindsey and Alex Morrison, Verifying Limitations on Military Personnel, Arms Control Occasional Paper, No. 9 (Ottawa, External Affairs and International Trade Canada, 1991).

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THE ROLE OF SCIENCE AND TECHNOLOGY IN THE CONTEXT OF INTERNATIONAL SECURITY, DISARMAMENT AND OTHER RELATED FIELDS

International transfer of sensitive technologies

Working paper submitted by Brazil

1. The report of Working Group IV on its work during the 1991 substantive session of the Disarmament Commission registered the interest expressed in continuing to work on the subject of the international transfer of high technology with military applications in the light of the working paper submitted by Argentina and Brazil (document A/CN.10/145) and other relevant documents, "bearing in mind the proposal for seeking universally acceptable international norms or guidelines that would regulate international transfers of sensitive technologies, while ensuring that such norms do not deny access to high technology products, services and know-how for peaceful purposes". 1/

2. At its forty-sixth session, the General Assembly adopted resolution 46/38 D, in which it took note of such interest and recognized that "norms or guidelines for the transfer of high technology with military applications should take into account legitimate requirements for the maintenance of international peace and security, while ensuring that they do not deny access to high technology products, services and know-how for peaceful purposes".

3. In paragraph 1 of the resolution, it called upon the Disarmament Commission "to continue its consideration within the scope of its agenda of all relevant aspects of the question of the transfer of high technology with military applications at its 1992 session, with a view to concluding its work on this matter at its 1993 session".

4. In order to further focus and structure the deliberations initiated in 1991 on the subject, it is suggested that a possible set of draft guidelines could be developed under the following categories:

(a) Objective:

The drafting of general principles and guidelines on the transfer of high technology products and services with application in nuclear weapons and other weapons of mass destruction;

(b) Parameters:

(i) The maintenance of international peace and security;

(ii) The contribution for the process of arms limitation and disarmament;

(iii) The promotion of unimpeded access for legitimate purposes;

(c) Principles:

(i) Non-discrimination;

(ii) Transparency;

(iii) Equity;

(iv) Predictability;

(v) Effectiveness; and

(vi) Reciprocity of benefits and obligations;

(d) Scope:

(i) Concrete items to be covered;

(ii) The relationship with existing regimes;

(iii) The role of the United Nations;

(e) Mechanisms:

(i) For transparency of rules and procedures;

(ii) For monitoring, control and verification;

(iii) For unimpeded access to high technology products and services for legitimate purposes;

(f) Processes:

Initiatives that could result from the adoption of a substantive document by the Disarmament Commission.

Notes

1/ See Official Records of the General Assembly, Forty-sixth Session, Supplement No. 42 (A/46/42), para. 42, report of Working Group IV, para. 16.

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PROCESS OF NUCLEAR DISARMAMENT IN THE FRAMEWORK OF INTERNATIONAL PEACE AND SECURITY, WITH THE OBJECTIVE OF THE ELIMINATION OF NUCLEAR WEAPONS

Working paper submitted by Portugal on behalf of the European Community and its member States

Following the structure of work proposed by the Chairman of Working Group II during the 1991 session of the Disarmament Commission and confirmed at the present session, the European Community and its member States wish to recall their common positions on the issue under consideration.

We are a community characterized by its diversity, comprising both nuclear and non-nuclear-weapon States, members and a non-member of a military alliance, members and non-members of a military organization. We have nevertheless taken a common stand on many aspects of the question of nuclear disarmament. We hope that our common views, which are reflected in the present working paper, will serve as a useful basis for further discussions in the Working Group.

A. The relationship between the process of nuclear disarmament and international peace and security

1. Peace and security can be achieved only through full observance of the Principles set out in the Charter of the United Nations and of other relevant international obligations under international law. The maintenance and enhancement of international security depends on responsible behaviour in relations between States. Such behaviour should strictly abide by the provisions contained in Article 2, paragraph 4, of the Charter, prohibiting

the threat or use of force, as well as other relevant obligations. However, the responsible conduct of international affairs by States aimed at the maintenance of international and national security requires more than just refraining from aggression. States should also demonstrate respect for international peace and security by engaging in measures of arms control, arms reduction and confidence-building.

2. In the field of arms control and disarmament, nuclear disarmament remains one of our highest priorities. Since the process of disarmament affects the vital security interests of all States, all must be actively involved and contribute to measures of disarmament and arms limitation. It is a matter of necessity for all to make progress in this field.

3. Nuclear proliferation is one of the greatest threats to worldwide security and stability. The existence of large arsenals of nuclear weapons and the danger of further proliferation of nuclear weapons affect the security of all States. Thus, nuclear disarmament and the questions of non-proliferation of nuclear arms, particularly following the political changes of the last 12 months, represent one of the most serious challenges, requiring continuous attention and commitment of all States Members of the United Nations.

B. Review of the steps taken in the process of nuclear disarmament

1. The satisfactory implementation of the INF Treaty which achieved in 1991 the elimination of a whole class of nuclear weapons is an important factor of increased stability.

2. We appreciate the progress that was made in 1991 in the area of nuclear disarmament, notably the START Treaty and the subsequent initiatives of Presidents Bush and Yeltsin. We also welcome the recent progress made by the United States and the Russian Federation towards further reductions in their nuclear arsenals and encourage their efforts in this direction.

3. We welcome in particular the unilateral decisions taken by the United States of America and the former Union of Soviet Socialist Republics to eliminate all land-based, short-range nuclear weapons and hope that the implementation of these measures will take place in the best possible conditions of security and transparency. We hope that these initiatives will lead to further far-reaching steps in order to enhance security and stability at the lowest possible levels of forces.

4. Negotiations on defence and space issues, including the relationship between means of strategic offence and defence, have taken place between the United States of America and the former Union of Soviet Socialist Republics. We stroingly support the continuation of these negotiations. We recognize the significant contribution made by the ABM Treaty in maintaining strategic stability.

5. The two nuclear Powers which are members of the European Community have also made a meaningful contribution to the process of nuclear disarmament by making reductions in some of their nuclear-weapon programmes.

6. We welcome recent initiatives in the denuclearization of Africa, in particular the accession of South Africa to the Non-Proliferation Treaty (NPT) and the safeguards agreement negotiated and signed with the International Atomic Energy Agency (IAEA), as well as the moves towards the implementation of the Declaration on the Denuclearization of Africa adopted by the Council of Ministers of the Organization of African Unity at its fifty-fourth ordinary session, held in Abuja in May-June 1991.

7. The European Community and its member States welcome major and positive initiatives in Latin America such as the Mendoza Declaration, the Cartagena Declaration, commitments entered into by Argentina and Brazil establishing full-scope safeguards regimes with IAEA, and the French decision to ratify Additional Protocol I of the Tlatelolco Treaty.

8. With regard to the Korean peninsula, we welcome the ratification of the safeguards agreement with IAEA by the Democratic People's Republic of Korea and look forward to an early implementation of the agreement to allow IAEA to carry out fully its responsibilities. We also encourage further development in the bilateral arrangements between the Democratic People's Republic of Korea and the Republic of Korea regarding mutual inspections.

C. Strengthening the process of nuclear disarmament, necessary conditions, and mechanisms required for it

1. While the primary responsibility for nuclear disarmament rests with those States which possess the most important arsenals, the international community as a whole must be actively involved and contribute to measures of nuclear disarmament and arms limitations. Our common wish is to see the achievement of further substantial reductions in the global level of nuclear weapons.

2. The creation of nuclear-weapon-free zones can contribute to stability in the regions concerned, to non-proliferation and to the disarmament process in general, provided all States concerned are prepared to cooperate on the basis of freely concluded agreements and in conformity with internationally agreed principles.

3. We support efforts to make progress in disarmament in the Middle East. To this end we call on all States in the region to adhere to the NPT and to place all of their nuclear facilities under IAEA safeguards. In this context, we recall our support for the initiative of President Mubarak to make the Middle East a zone free of weapons of mass destruction.

The International Peace Conference on the Middle East offers interested parties the possibilities of a direct dialogue, which is also an appropriate manner of furthering disarmament in the Middle East. We reiterate our commitment to play a constructive and active role in those multilateral negotiations, including in working groups of a political nature, such as "Arms control and regional security". Indeed the stability and security of that region are essential to Europe's own stability and security.

4. As far as nuclear testing is concerned, there have been a number of significant developments in recent years:

- A decrease in the total number of nuclear explosions and in their yield;

- The protocols of the Threshold Test Ban and the Peaceful Nuclear Explosions Treaty, signed by the United States and the Soviet Union in June 1990 and since ratified;

- The decision by the then Soviet Union to apply a one-year moratorium on nuclear testing;

- The decision by France to suspend its nuclear testing for 1992;

- The policy of the United Kingdom and the United States to test at minimum levels only.

Taking into account these developments and the widespread interest expressed in a comprehensive ban on nuclear testing, as well as the different views on the best way of achieving it and on its conclusion, we believe that the issue of the banning of nuclear testing should continue to be actively addressed.

5. We reaffirm our commitment to nuclear non-proliferation in general, and the NPT in particular as a cornerstone of the international regime of nuclear non-proliferation. We welcome the accession of more States to the NPT. With the accessions of France and China, all the permanent members of the Security Council will have underwritten the NPT, thus further strengthening the Treaty's universality. We urge again all States that have not yet done so to adhere to the NPT.

When we recognized and established relations with the new States of the former Soviet Union, an important requirement was that they should accede to the NPT as non-nuclear-weapon States. We consider it essential that all new States of the former Soviet Union uphold their commitments. We reiterate the importance we attach to single control of nuclear weapons and to the effective control of nuclear exports from these Republics.

We are confident that, in parallel with wider adherence to the NPT, a better functioning of the present nuclear non-proliferation regime can be brought about. Thus, in view of recent events, we look forward to a reinforcement of the various elements of that regime and, in particular, to a further strengthening and improvement of safeguards implementation, as well as of nuclear export controls. In this regard, we recall that the European Community and its member States proposed a set of concrete measures to this end at the last General Conference of IAEA.

We are pleased that some progress was made at the recent IAEA Board of Governors meeting towards strengthening the Agency's safeguards systems. We hope that the efforts of the Director General in this regard will be supported by all States.

We welcome the establishment of a Science and Technology Centre in the Russian Federation which will contribute both to disarmament and to non-proliferation objectives. We have already made clear the we will extend substantial support to the Centre and we look forward to cooperating with the other States involved to assure its success.

D. The role of the United Nations system in the process of nuclear disarmament with the objective of the elimination of nuclear weapons

1. In our view, the role of the United Nations in nuclear disarmament should be to continue to encourage and facilitate:

- The discussion of ways and means of achieving the international community's objectives in nuclear disarmament;

- The consideration of general guidelines and basic principles of arms control and disarmament;

- Support for existing arms control agreements and, where appropriate, for the negotiation of international instruments in the field of nuclear disarmament.

2. For a considerable time, nuclear disarmament has been one of the priority topics on the agenda of the Disarmament Commission. The need for progress in this field requires that continued proper attention be paid to such issues which deserve a continued discussion in the Disarmament Commission.

3. We believe that the important issue of nuclear testing should continue to be addressed in a multilateral context. We note the re-establishment in 1991 by the Conference on Disarmament of its Ad Hoc Committee on a Nuclear Test Ban. We believe that this organ should continue its consideration of this issue.

4. We regard the studies conducted by the United Nations as very useful and instrumental to the more advanced consideration of various aspects of disarmament and to the achievement of a greater general awareness of the subject. In this connection, we welcome the outcome of the studies and recommendations on the role of the United Nations in the field of verification and on nuclear weapons which were concluded by documents approved by consensus.

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PROCESS OF NUCLEAR DISARMAMENT IN THE FRAMEWORK OF INTERNATIONAL PEACE AND SECURITY, WITH THE OBJECTIVE OF THE ELIMINATION OF NUCLEAR WEAPONS

Working paper submitted by Ireland

I. INTRODUCTION

Ireland attaches the highest priority to nuclear disarmament. We consider that recent developments in the disarmament field represent significant steps towards the achievement of this goal. The present state of international relations provides an unprecedented opportunity for building on these achievements and making progress towards the earliest possible attainment of the ultimate objective of the total elimination of nuclear weapons.

We consider that the work of the United Nations Disarmament Commission in the process of nuclear disarmament should take full account of these recent developments. Over the next two years, it should focus on the future and seek to identify practicable approaches, in the multilateral and bilateral spheres, which can make a major contribution to the achievement of nuclear disarmament. This paper is intended to suggest what these practicable approaches might be and what role the United Nations might play in promoting them.

II. STRENGTHENING THE PROCESS OF NUCLEAR DISARMAMENT

Recent developments suggest that focusing on a number of intermediate objectives would make a major contribution towards the complete elimination of nuclear weapons. We suggest that the intermediate objectives in question should be selected so as to build on current achievements and to serve in their turn as platforms for more ambitious measures. We propose a number of areas where progress could be made relatively quickly without, in our view, endangering the security of any country.

(i) The elimination of sub-strategic systems

We consider that, with the substantial reductions in these weapons as a result of unilateral initiatives, the time is now ripe to seek the complete elimination of all sub-strategic systems. As an intermediate objective, this would have certain advantages. It would reduce the risk of conventional war escalating into a nuclear conflict. It would lessen the risks of accidental or deliberate interference. Confining nuclear weapons to strategic systems would make them weapons of truly last resort and so provide greater assurance that they would never be used.

(ii) Prohibition of the testing and development of new nuclear weapons

Ireland has long been a supporter of a comprehensive ban on nuclear testing. We continue to believe that agreement on such a ban is essential to prevent the horizontal and vertical proliferation of nuclear weapons. There is now a growing recognition of the need for restraint in the development of new and more powerful nuclear weapons. There is also an increasing realization that a cessation of nuclear weapons testing would contribute to non-proliferation as well as environmental objectives. In the recent past, two of the nuclear Powers have announced unilateral suspensions of their testing programmes.

The Disarmament Commission should consider how to promote the prohibition of the testing and development of new nuclear weapons, either by adoption of a multilateral instrument or by other appropriate methods.

(iii) Strengthening of the non-proliferation regime

Proliferation of nuclear weapons continues to be a major and growing problem which requires our continuous attention. There is a clear need for strengthening the nuclear non-proliferation regime, in particular through the development of the IAEA safeguards system. Other measures for strengthening the non-proliferation regime are also required. In this connection, recent proposals of measures aimed at introducing penalties for violations of the NPT Treaty merit consideration.

(iv) The disposal of nuclear weapons

The international community has a duty to play its part in ensuring that the destruction of nuclear weapons takes place in a safe and responsible manner, which fully respects the requirements of nuclear safety and environmental protection. Already, a number of important efforts have been made to assist in the dismantling and disposal of nuclear weapons. Consideration should be given to what further role the international community, and in particular the IAEA, can play in this regard.

(v) Confidence-building measures

Confidence-building measures have proved their effectiveness as a basis for more substantive measures in the field of conventional disarmament, notably in the CSCE framework. We consider that confidence-building measures would also serve a useful purpose in the nuclear arms field. Such measures should aim at reassuring non-nuclear weapon States that nuclear weapons are intended for purely defensive purposes and that nuclear arsenals are safe and under effective control. They should also help non-proliferation by persuading would-be nuclear weapons States that their security interests could be adequately ensured by other means.

III. ROLE OF THE UNITED NATIONS

Ireland considers that the question of nuclear disarmament is central to the security concerns of all States, whether or not they possess nuclear weapons. We consider that the United Nations, as the universal body with prime responsibility for the prevention of conflict, has an essential role to play in bringing about the elimination of nuclear weapons. The meeting of the Security Council at the level of Heads of State or Government on 31 January 1992 underlined the need for all Member States "to fulfil their obligations in relation to arms control and disarmament; to prevent the proliferation of all weapons of mass destruction (and) to avoid excessive and destabilizing accumulations and transfers of arms".

Although we recognize that many major steps towards eliminating nuclear weapons must, of necessity, be undertaken on the basis of unilateral or bilateral actions, we believe that much useful work can and should be undertaken at a multilateral level. This Commission should address, as a matter of urgency, how this multilateral dimension should be structured, and how Member States can effectively discharge their obligations in this regard.

We consider that the role of the United Nations should be to encourage and facilitate:

(i) The development of general guidelines and basic principles of arms control and disarmament;

(ii) Consideration of ways and means of achieving the international community's objectives in nuclear disarmament;

(iii) The negotiation, where appropriate, of international instruments in the field of nuclear disarmament.